

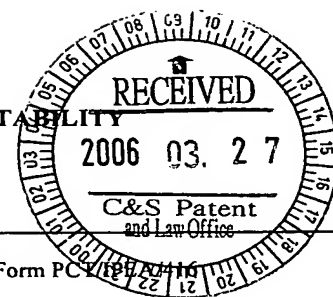
## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)





Applicant's or agent's file reference PCT-2719	FOR FURTHER ACTION		See Form PCT/ISA/416
International application No. <b>PCT/KR2004/003333</b>	International filing date(day/month/year) <b>17 DECEMBER 2004 (17.12.2004)</b>	Priority date (day/month/year) 22 DECEMBER 2003 (22.12.2003)	
International Patent Classification (IPC) or national classification and IPC  <b>C08L 59/00(2006.01)i</b>			
Applicant  <b>KOREA ENGINEERING PLASTICS CO., LTD. et al</b>			

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
  - a. ☐ (sent to the applicant and to the International Bureau) a total of \_\_\_\_\_ sheets, as follows:
    - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
    - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
  - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) \_\_\_\_\_ containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box relating to Sequence Listing (see Section 802 of the Administrative Instructions).

## 4.. This report contains indications relating to the following items:

- ☒ Box No. I Basis of the report
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand  <b>14 JULY 2005 (14.07.2005)</b>	Date of completion of this report  27 MARCH 2006 (27.03.2006)
Name and mailing address of the IPEA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer  HONG, SUNG RAN  Telephone No. 82-42-481-8146 

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/KR2004/003333

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☒ This report is based on translations from the original language into the following language English which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
- ☒ publication of the international application (under Rule 12.4)
- ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☒ the international application as originally filed/furnished
- ☐ the description:
- pages \_\_\_\_\_ as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ the claims:
- pages \_\_\_\_\_ as originally filed/furnished
- pages\* \_\_\_\_\_ as amended (together with any statement) under Article 19
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ the drawings:
- pages \_\_\_\_\_ as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ the sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/KR2004/003333

**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

## 1. Statement

Novelty (N)	Claims	1 - 5	YES
	Claims	None	NO
Inventive step (IS)	Claims	None	YES
	Claims	1 - 5	NO
Industrial applicability (IA)	Claims	1 - 5	YES
	Claims	None	NO

## 2. Citations and explanations (Rule 70.7)

Reference is made to the following documents:

D1: KR 2003-48733 A (Kolong Corp.) 25 June 2003

D2: US 5,232,969 A (Polyplastics Co., Ltd.) 03 August 1993

The claimed invention relates to (A) a polyoxymethylene composition having high fuel resistance, which comprises (a) 100 parts by weight of a polyoxymethylene; (b) from 0.1 to 2.0 parts by weight of a magnesium stearate; (c) from 0.01 to 1.0 parts by weight of an antioxidant; (d) from 0.01 to 2.0 parts by weight of a thermal stabilizer; and (e) at least 50 parts by weight of a reinforcing agent; and (B) the shaped articles using the same.

Document D1 discloses (AA1) a polyoxymethylene resin composition, which contains (aa1) 100 part by weight of a polyoxymethylene resin; (bb1) from 0.01 to 5 parts by weight of an antioxidant such as sterically hindered phenols or hindered amines; (cc1) from 0.05 to 4.0 parts by weight of a zinc compound; (dd1) from 0.05 to 2 parts by weight of an alkaline earth metallic compound such as a magnesium stearate; and (ee1) an amide compound.

Document D2 discloses (AA2) a moldable stabilized polyoxymethylene resin molding composition comprising (aa2) a polyoxymethylene base resin; (bb2) a phenoxy-containing compound; (cc2) a co-stabilizer, for example nitrogenous compounds, alkaline earth metal hydroxides, inorganic acid salts and carboxylic acid salts; and (dd2) other additives including antistatic agents, flame retardants, lubricants, nucleating agent, dyes and pigments, inorganic or organic filler materials in fiber, powder form, etc.; and (BB2) molded articles formed of the same.

(Continued in Supplemental Box.)

## Supplemental Box

In case the space in any of the preceding boxes is not sufficient.  
Continuation of:

Box No. V.

### I. Novelty and Inventive Sep

#### (1) Concerning claims 1-2

D1 is considered to represent the most relevant state of the art. Comparing claims 1-2 of the present invention with D1, both inventions are the same in preparing a polyoxymethylene resin composition comprising a polyoximethylene resin, a magnesium stearate, an antioxidant and a heat stabilizer such as an amide compound.

However, the claims 1-2 of the present invention differ from D1 in a component (cc1) of the composition. Therefore, claims 1-2 satisfy the requirement of Article 33(2) PCT with respect to novelty.

Though the claims 1-2 are different from D1 in a component (cc1) of the composition, a person skilled in the art could readily obtain the above components of the composition in claims 1-2 from the teaching of D1.

Accordingly, there shows no difficulty in configuration of the claims 1-2 and the effect thereby can be easily foreseen from D1.

Therefore, the subject matter of claims 1 and 2 of the present invention is not inventive under Article 33(3) PCT.

#### (2) Concerning claims 3-5

The subject matter of claims 3-5 relates to a polyoxymethylene resin composition comprising a polyoximethylene resin, a magnesium stearate, an antioxidant, a heat stabilizer and a reinforcing agent; and the shaped articles using the same.

Comparing claims 3-5 of the present invention with D1, though claims 3-5 are different from D1 in the component of a reinforcing agent and the shaped articles using the above polyoxymethylene resin composition, the skilled person would regard it as a normal design procedure to combine all the features set out in documents D1 and D2 and consequently, the component of a polyoxymethylene resin composition and the use of a polyoxymethylene resin composition as shaped articles in the claims 1-5 can be easily obtained.

Accordingly, there shows no difficulty in configuration of the claims 3-5 and the effect thereby can be easily foreseen from the combination of D1 and D2.

The subject matter of claims 3-5 of the present invention is considered to be novel under Article 33(2) PCT and is not inventive under Article 33(3) PCT.

### II. Industrial applicability

It is an objective of the present claims 1-5 to provide a polyoxymethylene resin composition and the use of a polyoxymethylene resin composition as the shaped articles. There is no reason for negating the industrial applicability of this invention. Consequently, the claims 1-5 appear to meet the requirements of Article 33(4) PCT.